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10/005,497	11/08/2001	Henri-Pierre Valero	26.0206	7991

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EXAMINER	
LE, TOAN M	
ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

GA

Office Action Summary	Application No. 10/005,497	Applicant(s) VALERO ET AL.
	Examiner Toan M Le	Art Unit 2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Shenoy et al..

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the

inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Referring to claim 1, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein the waveform peaks are not classified prior to tracking (col. 3, lines 36-39 and 50-53; col. 22, lines 52-57; figure 5).

As to claim 2, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein the step of generating tracks comprises classifying long tracks; classifying small tracks; classifying tracks that overlap; filling in gaps; and creating a final logs (col. 7, lines 61-67; col. 8, lines 1-27; col. 10, lines 12-22; Tables 1-2).

Referring to claim 3, Kimball et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein filling in gaps further comprises using non-classified tracks to fill gaps (col. 8, lines 27-51).

As to claim 4, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein filling gaps further comprises performing interpolation (col. 8, lines 27-51).

Referring to claim 5, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein interpolation is linear (col. 10, lines 35-67).

As to claim 6, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein linear interpolation is done if the gaps are less than 6 frames (col. 14, lines 24-67; col. 15, lines 1-67; figures 6-9).

Referring to claim 7, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein filling in gaps further comprising performing interpolation (col. 8, lines 27-51).

As to claim 8, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein tracks are considered as individual objects comprising peaks (figures 5-9).

Referring to claim 9, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein peaks are defined using semblance, time, and slowness (col. 5, lines 55-58; figure 2).

As to claim 10, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein only time and slowness are used for classification (col. 3, lines 53-57).

Referring to claim 11, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks

received at a plurality of depths, wherein a probability of a track being one of a compressional and shear is determined using all points forming the track (col. 18, lines 9-13).

As to claim 12, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein classification of one track is independent of classification of a track different from that track (col. 20, lines 24-26).

Referring to claim 13, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein step of classifying the long track further comprises: fitting a distribution function on peaks of the track; calculating a mean and variance of the distribution; comparing distribution of the data with a distribution of a model data; and classifying the long track according to the model data if the comparison determines that the track data and model data are consistent (col. 20, lines 26-38).

As to claim 14, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths wherein step of classifying the short tracks further comprises: computing a 2-D median of the track, the median being a point defined by corresponding coordinates in a slowness and time domain; determining an intersection of the slowness and time domain with a model data distribution; defining the model in the slowness and time domain as an ellipse; and classifying the small track based on a position of the peak in relation to the model data (col. 20, lines 26-38; figure 2).

Referring to claim 15, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein the step of filling in the gaps further comprises: determining if there is a gap in a selected track at a depth range covered by the selected non-classified track; deleting the track if no gap is found; and filling the gap in the selected track after determining that the selected non-classified track can be used to fill the gap (col. 8, lines 27-51).

As to claim 16, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein determining if the selected track can be used to fill the gap is done by evaluating if the selected track is between upper part and lower part of a skeleton, wherein the skeleton comprises tracks that have been classified so far (col. 14, lines 24-67; col. 15, lines 1-67; figures 6-9).

Referring to claims 17-18, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein the long track comprises more than 20 frames and wherein the small track comprises less than or equal to 20 frames (col. 19, lines 27-67; col. 20, lines 1-23).

As to claim 19, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein the model is one of a compressional model or shear model (Abstract).

Referring to claim 20, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths wherein slowness and time peaks are treated having Gaussian probability distribution (col. 4, lines 56-64).

As to claim 21, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths wherein 2D Gaussian probability distribution of slowness and time peaks is measured at one depth based on measurements at a previous depth (col. 4, lines 39-64).

Referring to claim 22, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths wherein the measurement is done by a 2D Kalman filter process (col. 4, lines 39-64).

As to claim 23, Shenoy et al. disclose a method incorporated into a computer system for determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths, wherein the waveform peaks are not classified prior to tracking (col. 3, lines 36-39 and 50-53; col. 22, lines 52-57; figure 5), wherein the method comprises classifying long tracks, classifying small tracks, classifying tracks that overlap, filling in gaps and creating a final log (col. 7, lines 61-67; col. 8, lines 1-27; col. 10, lines 12-22; Tables 1-2), wherein the method is implemented in a program stored on a storage media and the output is applied to at least one output device (figures 10-11).

Referring to claim 24, Shenoy et al. disclose a method of determining the sonic slowness of a formation traversed by a borehole comprising generating tracks from sonic waveform peaks received at a plurality of depths (col. 3, lines 36-39 and 50-53; col. 22, lines 52-57; figure 5), comprising: a) classifying long tracks of greater than 20 frames, further comprising fitting a distribution function on peaks of the track; calculating a mean and variance of the distribution; comparing distribution of the data with a distribution of a model data; and classifying the long track according to the model data if the comparison determines that the track data and model data are consistent (col. 20, lines 26-38); b) classifying small tracks of less than or equal to 20 frames, further comprising computing a 2-D median of the track, the median being a point defined by corresponding coordinates in a slowness and time domain; determining an intersection of slowness and time domain with a model data distribution; defining the model in the slowness and time domain as an ellipse; and classifying the small track based on a position of the peak in relation to the model data (col. 20, lines 26-38; figure 2); c) classifying tracks that overlap (Tables 1-2); d) filling the gaps, further comprising determining if there is a gap in a selected track at a depth range covered by a selected non-classified track; deleting the track if no gap is found; and filling the gap in the selected track after determining that the selected non-classified track can be used to fill the gap (col. 8, lines 27-51); and e) creating a final log (col. 10, lines 12-22).

<u>Remarks</u>:

Response to Arguments

Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan M Le whose telephone number is (703) 305-4016. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4900.

Toan Le

December 3, 2003

JBarlow

John Barlow
Supervisory Patent Examiner
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